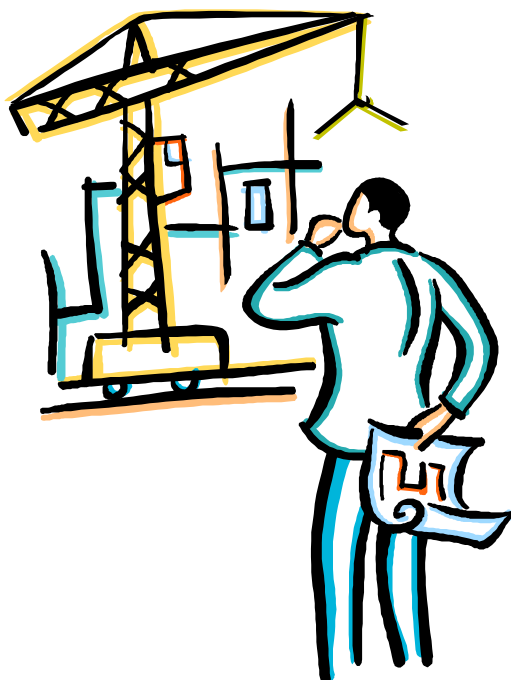




# ***City of Norfolk***

## ***Building Construction Services***

# ***Pre-Construction Manual***



This guide has been prepared to assist you with Building Permit and Inspection procedures for large, commercial projects. As a guide, its use is limited to general requirements and ordinary procedures. For more specific guidance, please contact the Code Official, Deputy Code Official or Team Leaders.

# **Construction Services Division City of Norfolk**

## **PRE-CONSTRUCTION MANUAL**

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**PROJECT MEMBERS CONTACT INFORMATION**

Project: \_\_\_\_\_ Address: \_\_\_\_\_

Owner \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Architect of record \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Architect(s) \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Architect(s) \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Engineer(s) of record \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Engineer(s) of record \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Engineer(s) of record \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Special Inspector (Agent One) \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Special Inspector (Agent Two) \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Special Inspector (Agent Three) \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Special Inspector (Agent Four) \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

General Contractor \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Plumbing Contractor \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Electrical Contractor \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Mechanical Contractor \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Elevator Contractor \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Project Superintendent \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Project Manager \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

Primary Contact \_\_\_\_\_ Job Phone \_\_\_\_\_ Cell \_\_\_\_\_

(This is ONE individual who will be available 24 hours per day able to respond to requests of all kinds related to the project)

**A completed copy of this list must be posted on the exterior of job site trailers.**

**INSPECTOR ASSIGNMENTS (and City contact information)**

**PROJECT NAME:** \_\_\_\_\_

**PROJECT ADDRESS:** \_\_\_\_\_

**INSPECTOR ASSIGNMENTS:**                      **Office Phone #**              **Cell Phone #**

*Building:* \_\_\_\_\_

*Plumbing* \_\_\_\_\_

*Electrical* \_\_\_\_\_

*Mechanical:* \_\_\_\_\_

*Elevator:* \_\_\_\_\_

*Fire Protection* \_\_\_\_\_

**TEAM LEADERS:**                                      **Office Phone #**              **Cell Phone**

*Building:*              *Bernard Boomer*              664-6591              620-2863

*Plumbing*              *Leon Yoder*              664-6815              620-2660

*Electrical*              *Jeff White*              664-6545              620-2613

*Mechanical:*              *Paul Adams*              664-6542              620-2776

*Elevator:*              *Jeff White*              664-6545              620-2613

*Fire Protection*              *Bernard Boomer*              664-6591              620-2863

**Deputy Code Official:**              **Vernell Woods**              **664-6526**              **621-5078**

**Code Official:**              **Lynn Underwood, CBO**              **664-6511**              **641-7275**

## **CHANGES TO ORIGINAL PLAN; SUBMITTAL AND APPROVAL**

- ✓ Changes to original “Approved” Plan and Permit must be made by submitting those changes in an acceptable manner to the Permit Office for review and approval prior to adapting the changes to field conditions. The changes must be made by the original Registered Design Professional and identified in a conventional manner acceptable to the City of Norfolk. Clouding the changes or key noted revisions are examples of an acceptable proposed change. The kind of changes that require a review include the following:
  - Any changes in Registered Design Professionals or contractors associated with the project.
  - Changes in site location or orientation, or exterior changes that affect prior approvals from Planning and Zoning Site plan Review or Design review.
  - Changes in building size, height or story classification.
  - Changes in Building’s occupancy classification or type construction.
  - Architectural revisions that affect fire and life safety, change of a fire wall, fire barrier, or fire partition design, smoke barrier or partition, penetration fire resistant joint system, changes in means of egress, finish changes, alternate materials, emergency alarm design changes, changes that affect accessibility requirements, changes that affect interior environment,
  - Structural revisions and changes in Special Inspection scope and personnel.
  - Deferred submittals such as shop drawings, fire protection schematic, Fire suppression hoods, sprinkler design, fire alarm drawings, elevator design, and other special installations.
  - Plumbing, mechanical, or electrical revisions that alter the original design.

## **DEFERRED SUBMITTALS**

- ✓ It may be that certain parts of the construction documents are not complete when other work is ready. These documents may be deferred until the design is complete. Examples of these deferred submittals are: Architectural, fire and life safety or structural shop drawings, fire protection schematic, commercial kitchen fire suppression hood design, building fire suppression (sprinkler) design, building fire alarm drawings, elevator design, and other special installations. In any case, approval is required prior to each phase of work is initiated.

## **PARTIAL PERMITS**

- ✓ Section 109.6 of the Virginia Construction Code states in part:
  - *Phased approval. The building official is authorized to issue a permit for the construction of foundations or any other part of a building or structure before the construction documents for the whole building or structure have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such permit for the foundation or other parts of a building or structure shall proceed at the holder’s own risk with the building operation and without assurance that a permit for the entire structure will be granted.*

This means that certain construction may begin with a limited scope of work without the overall permit being approved. These partial permits may include foundation construction, building shell or similar phased work. Approval must be granted prior to beginning work.

### **CONSTRUCTION FENCES – IBC 3306.5**

*All commercial and large projects are to be secured by a chain-link, plywood or other non-climbable type fence at least seven feet unless otherwise approved. This fence shall be in place before excavation begins. The Building Official may require fencing of single family and future residential properties per IBC Section 3306.*

### **SAFETY**

Construction activity can increase unsafe conditions. City of Norfolk Inspection personnel are expected to use reasonable judgment when considering safety at projects they visit for inspection. This includes complying with all City of Norfolk safety rules and those on the construction site.

In the event that any of the following conditions are present, inspectors are encouraged to contact their supervisor and seek further direction. If a construction site represents a safety hazard, a supervisor will contact the project superintendent to discuss. In an extreme case, inspection personnel are discouraged from entering projects that, in their judgment, may cause them harm. Examples of dangerous conditions include:

- ✓ Poor lighting or lack of lighting that would prevent safe access or egress.
- ✓ Unsafe use of equipment.
- ✓ Poor or lack of identification for areas that do not have substantial guards to prevent falling.
- ✓ Poor or lack of access to inspection areas. Examples include flimsy ladders, un-braced scaffolding, steep or slippery ramps, etc.

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#### **Commentary**

Safety is important to everyone. Jobsite safety is the responsibility of the contractor. If jobsite safety falls below an acceptable, inspection personnel are expected to avoid the conditions that may cause them harm. Failure to maintain adequate safety on a jobsite is regarded as negligence. Negligence and incompetence in the practice of contracting is a PROHIBITED ACT under the rules that regulate contractors in Virginia (18VAC 50-22-260).

### **PARKING**

To expedite inspections, please arrange to provide a convenient location for inspection personnel to park their vehicles as close as possible to the area where inspections are needed. Indicate on a site plan where this will be through the duration of the project.

### **ADDRESS POSTING REQUIREMENTS**

**Section R325.1 of the International residential Code states in part:** *Premises identification.*

*Approved numbers or addresses shall be provided for all new buildings in such a position as to be plainly visible and legible from the street or road fronting the property.*

**Section 505 of the International Fire Code states in part:** *New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numerals or alphabet letters. Numbers shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of 0.5 inch (12.7 mm).*

## **ADDRESS POSTING REQUIREMENTS**(continued)

**Section 42-202 of the City of Norfolk Code states in part:** *Duty of owner to apply for and display number.*

(a) *When any building is erected within the city limits, the owner or agent thereof shall apply to the director of public works for the proper number for the same and, upon the assignment by the director of public works of the proper number for such building, it shall be the duty of the owner thereof, within thirty (30) days from the receipt of notice of such assignment, to cause such building to be numbered, at his own expense, in accordance with the provisions and requirements contained in this article.*

(b) *It shall be the duty of the owner or agent of each residential, commercial or industrial building in the city to display properly on the front thereof, and in a position easily observed from the street, and in numbers not less than four (4) inches in height, the proper street address number of such building, for the ascertainment of which he shall apply to the director of public works. All such buildings shall be numbered in accordance with this article.*

(c) *Before any certificate of occupancy is issued by the building official, the department of planning and community development shall cause an inspection to be done to ensure that the proper number has been posted as required by this article.*

(d) *All buildings with multiple floors, suites or units shall submit a plan for an internal numbering system to the fire department for approval prior to occupancy. The internal plan as required in this section shall be submitted annually, and whenever there is a reconfiguration of suites or units, or a reuse.*

It is the duty of City of Norfolk Building Inspectors to enforce these code requirements for new construction. The following standards clarify how addresses must be posted on new construction before a Final Inspection is approved and a Certificate of Occupancy is issued:

1. Addresses must be posted on the front of all buildings, preferably near the entrance.
  - a. Characters must be four (4) inches in height with a minimum stroke width of ½ inch.
  - b. Address must be plainly visible and legible from the street.
2. For buildings positioned on a lot (such as a flag lot or extended private driveway) such that addresses on the front are not easily observed from the street, the addresses shall also be posted at a location immediately adjacent to the street access in addition.
  - a. Characters must be four (4) inches in height with a minimum stroke width of ½ inch.
  - b. Mailbox, monument, curb marker or similar identification is acceptable for this additional identification, as long as it is clearly visible from the street.

## **GENERAL INSPECTION PROCEDURES**

The standards for conducting an inspection include:

- ✓ The inspector will make every reasonable effort to make contact with the principal, if available.
- ✓ Posting of Permit: The permit must be posted in a location visible from street per Section 117.3 USBC. Ensure the permit is posted in a location and manner acceptable to this jurisdiction. If permit is not posted or available, the inspector will conduct an inspection and reject for all code deficiencies including that the permit is not posted.
- ✓ The inspector will review inspection results from previous inspections before beginning their inspection. Contractor will maintain a record of all inspection reports.
- ✓ Construction Documents and Plans. A complete set of construction documents and plans that includes Building, Plumbing, Mechanical and Electrical trades with the City of Norfolk's Approval stamp **MUST** remain on site during inspections. Section 109.5 USBC states in part:
  - Approval of construction documents. The approval of construction documents shall be limited to only those items within the scope of the USBC. Either the word "Approved" shall be stamped on all required sets of approved construction documents or an equivalent endorsement in writing shall be provided. One set of the approved construction documents shall be retained for the records of the local building department and one set shall be kept at the building site and shall be available to the building official at all reasonable times.
- ✓ Each inspector (Building, Plumbing, Mechanical and Electrical) will review their construction plans on the initial visit to the jobsite, and always review the approved set of plans to get a complete perspective of the scope of work. The inspector will note the status of inspection results on back of permit.
- ✓ On subsequent visits when an inspector is inspecting different aspects of construction, they will always review the approved set of plans to verify the conditions and limitations listed on plans for that work that is new to them. They will pay attention to special conditions identified by plan review staff, are normally noted as redline comments.
- ✓ If plans are not available for any reasons, the inspector will use their judgment as to whether they can inspect without approved plans, or if the inspection is rejected and if a re-fee should be applied.
- ✓ If a code violation exists, the inspector will reject the inspection. The inspector will not hold over until the next day unless authorized by their supervisor.
- ✓ The inspector will explain and clarify the section of the Code that is in violation with the project superintendent or principal and that section will be clearly noted on the violation notice. If rejected, they will note the code citation to clarify the requirement.
- ✓ For partial approvals, the inspector will clearly and thoroughly specify the limitation of their approvals on the inspection slip (or other acceptable location). They will be specific as to floor or portion of building that is approved.
- ✓ The inspector will update electronic records after each inspection – using the IVR.
- ✓ Each inspector will sign the CO Permit card when their trade is complete and approved. The building inspector will be last to sign.
- ✓ We inspect based on required inspections established in the Virginia Construction Code that states in part: Section 113.3 Minimum inspections. The following minimum inspections shall be conducted by the building official when applicable to the construction or permit:
  1. Inspection of footing excavations and reinforcement material for concrete footings prior to the placement of concrete.
  2. Inspection of foundation systems during phases of construction necessary to assure compliance with this code.
  3. Inspection of preparatory work prior to the placement of concrete.
  4. Inspection of structural members and fasteners prior to concealment.
  5. Inspection of electrical, mechanical and plumbing materials, equipment and systems prior to concealment.
  6. Inspection of energy conservation material prior to concealment.
  7. Final inspection.



## **GENERAL INSPECTION PROCEDURES** (continued)

- ✓ Normal Business Hours for inspection personnel is 8:00 – 5:00PM. Inspectors perform administrative duties between 8:00 and 9:00AM and do not begin inspection until after that time. Requests for a morning or an afternoon inspection is a reasonable request. Requesting a specific time for an inspection is not a normal request and must be made through the Team Leader. Requesting an inspection outside normal business hours is not a normal request and must be made in writing and approved by the Team leader and authorized by the Code Official or Deputy Code Official.
- ✓ A request for an inspection involving a large number of units, floors or buildings will be at the discretion of the Inspector as to the number of inspections that can be completed in a single inspection request.
- ✓ Response to request for inspection will be within 48 hours.
- ✓ Requesting an inspection is the responsibility of the applicant. Section 113.1.2 USBC states in part:  

Duty to notify. When construction reaches a stage of completion which requires an inspection, the permit holder shall notify the building official.
- ✓ Requests for inspections are made through the Interactive Voice Response (IVR) request line 664-6509. Requests for inspections made after midnight will result in an inspection the NEXT working day.

## **SPECIFIC PRE-CONCEALMENT INSPECTION GUIDELINES**

### **BUILDING INSPECTIONS\***

Footing: Review of plans to verify compliance with 2003 International Building Code, Width, thickness, depth below grade, gravel and vapor barrier (if required), steel reinforcement, soil condition (probe used), forms installed? Connections to foundation wall, cleanliness of footing cavity.

Foundation: Foundation wall design, width, thickness (grade stakes), height, material installation standards (concrete, masonry, grout, etc), steel reinforcement, foundation anchors, elevation certificate (Flood hazard).

Pre-concrete: Required size (height, width, length) of form, cleanliness of cavity, soil condition (probe used), substantial formwork in place, steel reinforcement installed, etc.

Structural Frame of Element: Framing element installation, design size (width, height and length), connection details, shear wall panels, hold downs, foundation anchor attachment, nail or screw details, etc.

Energy Conservation: Installation of insulation in perimeter slab, floor, walls and ceiling areas, thermal resistance of doors and windows, required efficiency rating of heating and cooling equipment, sealing of joints.

Material and Personnel Hoist Installation: Review of installation, monitor test of safety mechanism in live test.

Elevator Installation: Structural inspection of shaft, rails, pit and machine room. Monitor final test of all operations.

**\* Link or group field reports to a specific inspection request to assist the inspector. Approval by the Special Inspector does not necessarily mean it is acceptable to cover work requiring regular inspections. Coordination will ensure compliance.**

## **SPECIFIC PRE-CONCEALMENT INSPECTION GUIDELINES** (continued)

### **MECHANICAL INSPECTIONS**

Rough-in installation: Review of mechanical plans for compliance with IMC and IFGC, size, location of all mechanical equipment and ductwork, adequate clearance and support, required combustion air, return air, exhaust venting, all gas lines tested, and all piping and duct work that penetrates a fire rated assembly have been fire stopped, elevation certificate (Flood hazard).

Final equipment set: Access and working clearance,

### **ELECTRICAL INSPECTIONS**

Rough-in wiring: Review of plans to verify compliance with 2003 National Electrical Code, Proper wire, box size and locations, adequate support and terminations, proper connections, device installation, damage to wire or devices, adequate number and location of outlets, and switched lights, elevation certificate (Flood hazard).

Temporary Electrical Service: Proper service equipment installation, service entrance clearance or burial, adequate grounding and bonding, proper temporary wiring, equipment label, adequate access and clearance, overcurrent devices,

Final equipment set: Access and working clearance, disconnects, required service outlets and lighting,

### **PLUMBING INSTALLATIONS**

Rough-in plumbing DWV: Review of plumbing plans for compliance with IPC and the City of Norfolk Code. The drainage system must be installed as per chapter 7 and vented per chapter 9 IPC. The system must be tested per section 312. No part of the system is to be covered until approval is given from the Plumbing Inspector, elevation certificate (Flood hazard).

Water Distribution System—the water distribution system must be installed per Chapter 6 and tested as per section 312 for inspection. No part of the system is to be covered until approval is given from the Plumbing Inspector

Storm Drainage systems must comply with chapter 11 City Code. On site Storm Drainage systems are given 2 options for inspections. (The Contractor must select 1 of the 2 options prior to starting the job.)

- ✓ Option #1 – The City of Norfolk Plumbing Inspector must inspect and approve each section of pipe prior to covering the pipe.
- ✓ Option#2. – The contractor must call and schedule inspections each day that pipe is being installed so that the Inspector can monitor the job, but may cover the pipe after it is installed. At the end of the project, the contractor must have the pipe video taped (with the Plumbing Inspector on site to witness the video inspection.) A copy of the video inspection tape given to the City of Norfolk as a part of the inspection record. This will allow the contractor to install and cover the pipe, then move forward if site conditions are problematic such as a high water table.

Sanitary sewer: Installed per section 703 IPC; tested per section 312.6 IPC. After approval the sewer may be covered.

Water service pipe: Installed per section 603 and tested per section 312.5 IPC. After approval the pipe may be covered.

## **THIRD PARTY INSPECTIONS**

Third party inspections are an accepted industry practice in cases where a private sector inspector performs an ordinary inspection that is required by the Virginia Uniform Statewide Building Code.

### **Third Party Inspections**

Section 115 of the Uniform Statewide Building Code states, in part:

*115.8.1. Approved inspection agencies. The building official may accept reports of inspections and tests from approved individuals or approved inspection agencies, which satisfy qualifications and reliability requirements. Under circumstances where the building official is unable to make the inspection or test within two working days of a request or an agreed upon date, the building official shall accept reports for review from such approved individuals or agencies. Such reports shall be in writing and shall be certified by the individual inspector or by the responsible officer when the report is from an agency.*

*Note: Photographs, videotapes or other sources of pertinent data or information may be considered as constituting such reports and tests.*

The following conditions apply to Third Party Inspections and inspectors:

1. Third party inspectors are permitted to conduct an ordinary inspection under certain circumstances that include the following conditions.
  - a. If City of Norfolk inspector is unable to inspect within 48 hours of request.
  - b. For unusual or special projects where timeliness of inspection is critical to the construction process such as weather conditions or unusual construction.
  - c. For other unusual conditions or circumstances approved by the Code Official
2. Third Party Inspections are considered to be the exception and not a routine practice. They should be approved prior to the issuance of a building permit except for unusual circumstances such as weather or unusual construction. Third Party Inspectors must be approved prior to the issuance of a building permit. Their approval will be based on their qualifications as outlined in item 3b.
3. Third Party Inspectors:
  - a. May not have a direct relationship with the project (they cannot inspect their own work).
  - b. Inspection personnel must be approved in advance and be experienced in the aspect to be inspected and be either:
    - i. Registered Design Professional, or
    - ii. Certified by the International Code Council, or by the State of Virginia in the category of construction being inspected, or
    - iii. Certified by the National Institute for Certification in Engineering Technologies (NICET) in the category of construction being inspected, or
    - iv. Other approved credentials or related job experience approved by the Code Official.
4. Approval of Inspections:
  - a. Third party inspectors will submit a report of approval of inspections to this office within 5 working days, in the form of a completed Third Party Inspection Statement Form that enumerates the type of inspection performed and any limit of construction work inspected.
  - b. Certification of the inspection by the third party inspector will be in accordance with the approved plans and the current edition of the Virginia Uniform Statewide Building Code.

## **SPECIAL INSPECTIONS**

Special Inspections are required as specified in Chapter 17 of the international Building Code and includes the following:

- ✓ Steel
  - Welding
  - Details
  - High strength bolts
- ✓ Concrete
  - Over 2500 psi design strength
  - 4 stories or more
  - Certain foundation walls
- ✓ Masonry
  - Not empirically designed
- ✓ Fabricators of load bearing members and assemblies
- ✓ Wood construction
  - Prefabricated wood structural elements
- ✓ Soils with fill over 12 inches and certain conditions
- ✓ Foundations
  - Pile foundations
  - Pier foundations
- ✓ Wall panels and veneers in certain seismic zones
- ✓ Spray fire resistant materials
- ✓ Exterior Insulation and Finish Systems (EIFS)
- ✓ Other special cases
  - Tower Cranes

Section 111.2 of the Virginia Construction Code states in part:

Special inspection requirements. Special inspections shall be conducted under the supervision of registered design professionals and in accordance with Section 1704. Persons engaged in the testing and inspection of construction materials, and the facilities, equipment and procedures they use in the process, shall comply with ASTM E329 or other standards acceptable to the building official. The building official may require written documentation of personnel certifications and laboratory accreditation, when appropriate, as evidence of conformance with this section. The permit applicant shall submit a statement of special inspections as a requisite to the issuance of a building permit. All fees and costs related to the special inspections shall be the responsibility of the building owner.

- ✓ ***The City of Norfolk has adopted the **Hampton Roads Special Inspection Procedures and Guidelines**, a **Regional Guideline**, for all special inspections required based on the above referenced documents. Regular field reports must be submitted to this office within 7 days. Link or group field reports to a specific inspection request to assist the inspector. Approval by the Special Inspector does not necessarily mean it is acceptable to cover work requiring regular inspections. Coordination will ensure compliance.***

**ATTACHMENT: Hampton Roads Special Inspection Procedures and Guidelines**

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Commentary

Special Inspections are required for certain critical structures and building components. This policy is subject to change according to the latest edition of the International Building Code and the Virginia Construction Code. You will be given a copy if requested. These are available from our website: [WWW.Norfolk.gov](http://WWW.Norfolk.gov).

## **TOWER CRANES: Inspection and Testing**

**PERMIT IS REQUIRED:** When a tower crane is installed or to be used.

### **PROCEDURAL REQUIREMENTS:**

1. Prior to the placement of crane foundation, the **CRANE OWNER, CONTRACTOR OPERATING THE CRANE**, or the **GENERAL CONTRACTOR** shall submit the following information to the City of Norfolk Construction Services Division for review and approval:
  - ⇒ Crane specifications including manufacturer's operating model number, hook height, boom length, overturn moment, and manufacturer's specification relative to overturn moment, slewing moment, vertical load (minimum and maximum), shear per bolt group, uplift per bolt group, compression per corner and horizontal shear (minimum and maximum).
  - ⇒ Plans showing structural calculations and design of crane foundations signed and sealed by a **PROFESSIONAL ENGINEER** registered in Virginia. Plans and calculations shall clearly indicate footing dimensions, required compressive strength of concrete, steel reinforcement, and allowable soil bearing pressure. The allowable soil bearing pressure shall be consistent with values shown the soil test report for the project prepared by the **GEOTECHNICAL ENGINEER OF RECORD**.
  - ⇒ Plans, signed and sealed by a professional engineer registered in Virginia, showing the crane location, boom swing and method of support for cranes located within or supported by the structure. Such plans shall be reviewed and approved by the **STRUCTURAL ENGINEER OF RECORD**.
  - ⇒ Completed Statement of Special inspections.
2. Prior to use of the crane, the **CRANE OWNER, CONTRACTOR OPERATING THE CRANE**, or the **CRANE MANUFACTURER**, shall submit to Building Construction Services a certification of the crane inspection including:
  - ⇒ Inspection reports addressing soil bearing capacity, foundation inspection reports, and concrete tests.
  - ⇒ Upon completion of the crane foundation, signed by the **SPECIAL INSPECTIONS ENGINEER OF RECORD** shall indicate the date of completion on the Final Report of Special Inspections.

## **ELEVATOR REQUIREMENTS AND REFERENCED STANDARDS**

### **REFERENCED STANDARDS**

- ⇒ 2003 Virginia Construction Code; Uniform Statewide Building Code
- ⇒ 2003 International Building Code
  - ASME A17.1 2000 edition
  - ASME A18.1 1999 edition
  - ASME A90.1 1997 edition

### **ELEVATOR SIGNAGE REQUIREMENTS**

1. No smoking signs shall be posted in each car.
2. Fire emergency placard to be installed adjacent to each hall call station.
3. Firefighters Service Instructions.
  - Phase I in main lobby adjacent to key switch
  - Phase II in each car adjacent to key switch
4. Current elevator inspection certificate shall be posted in each elevator cab or a sign posted to indicate where certificate is available for review.

### **MATERIAL HOISTS REQUIREMENTS**

Separate permit is required for erection and operation of all material hoists. Installation must be inspected as follows:

1. A drop test is required before operation of the material hoist. This test will be witnessed by City of Norfolk Elevator Inspector.
2. Material hoists over 85 feet shall have the hoist structure constructed of non-combustible or fire retardant materials. Cables across working or walking spaces to be protected to prevent tripping.
3. Hoist booklet to be kept on the job site.
4. Signage is necessary indicating rated load, no riders and operating rules.
5. A six (6) foot high fence is required around hoist at the ground level.

### **PERSONNEL HOIST REQUIREMENTS**

1. Separate permit required for erection and operation of all personnel hoists.
2. Full load test required before hoist is put into service after each move and erection and each 90 days while in use. This test will be witnessed by the Elevator Inspector.

### **ELEVATOR REQUIREMENTS**

1. Building plans shall show location and dimension of all elevator equipment and a detailed layout of the elevator machine room must be submitted to Elevator Inspector for Plan review approval prior to permit approval.
  - ✓ Two (2) copies of elevator shop drawing shall be submitted for approval prior to installation. The plan shall describe the sequence of operation for fireman's service under normal power conditions and the operation on the standby power source. The submittal must also include the status indicator panel and its designed location.
2. Design must meet IBC Chapter 30 and ASME A17.1-2000 edition.

## **FIRE PROTECTION DURING CONSTRUCTION**

### **Chapter 14 International Fire Code**

#### **OWNER'S RESPONSIBILITY**

Portions of Section 1408 of the International Fire Code state in part:

Program superintendent. The owner shall designate a person to be the Fire Prevention Program Superintendent who shall be responsible for the fire prevention program and ensure that it is carried out through completion of the project. The fire prevention program superintendent shall have the authority to enforce the provisions of this chapter and other provisions as necessary to secure the intent of this chapter. Where guard service is provided, the superintendent shall be responsible for the guard service.

1408.2 Prefire plans. The fire prevention program superintendent shall develop and maintain an approved prefire plan in cooperation with the fire chief. The fire chief and the fire code official shall be notified of changes affecting the utilization of information contained in such prefire plans.

1408.4 Fire protection devices. The fire prevention program superintendent shall determine that all fire protection equipment is maintained and serviced in accordance with this code. The quantity and type of fire protection equipment shall be approved.

**Fire Companies must have access to project at reasonable times to tour the construction site during various stages of the project to familiarize themselves with layout and potential hazards.**

**FIRE EXTINGUISHERS:** Structures under construction, alteration or demolition shall be provided with not less than one approved portable fire extinguisher in accordance with Section 906 and sized for not less than ordinary hazard as follows:

1. At each stairway on all floor levels where combustible materials have accumulated.
2. In every storage and construction shed.
3. Additional portable fire extinguishers shall be provided where special hazards exist including, but not limited to, the storage and use of flammable and combustible liquids.

#### **TEMPORARY STANDPIPE EXTENSION**

Section 1413.1 of the International Fire Code states in part: Where required. Buildings four or more stories in height shall be provided with not less than one standpipe for use during construction. Such standpipes shall be installed when the progress of construction is not more than 40 feet (12 192 mm) in height above the lowest level of fire department access. Such standpipe shall be provided with fire department hose connections at accessible locations adjacent to usable stairs. Such standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

The Virginia Uniform Statewide Building Code, and the 2003 editions of the International Fire and Building Code requires standpipes, where required, to be not more than one floor below the highest forms or staging during construction.

- 1) The temporary standpipe shall be extended to all basement levels when initially installed.
- 2) The temporary standpipe must be provided prior to the framing of the 3<sup>rd</sup> floor.
- 3) The temporary standpipe must extend to the story below the floor slab which supports the highest formwork.
- 4) In a steel structure, the temporary standpipe must be extended to the story below the highest complete floor deck.
- 5) The Building Inspector will coordinate with the Office of the Fire Marshall to establish the location of the temporary fire department connection.
- 6) The temporary standpipe shall be marked as a Fire Department standpipe connection.

**ASPHALT TAR KETTLES:** Section 303 of the IFC states in part: Asphalt (tar) kettles shall not be located within 20 feet (6096 mm) of any combustible material, combustible building surface or any building opening and within a controlled area identified by the use of traffic cones, barriers or other approved means. Asphalt (tar) kettles and pots shall not be utilized inside or on the roof of a building or structure.

#### **HIGH-RISE CONCRETE REPORTS**

*The general contractor shall display in a prominent place in the Job Office; clearly marked "CONCRETE STRIPPING REPORT" for inspection by Inspection Personnel and emergency responders. If there is a security guard, they shall have a key for access to the office with the "Concrete Stripping Report". The Fire Department needs to know the last pour date before sending firefighters inside a building to suppress fires, i.e., formwork and shoring, etc.*

#### **EMERGENCY VEHICLE ACCESS**

Section 1410 of the international Fire Code states in part:

Approved vehicle access for fire fighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet (30 480 mm) of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.

## **TEMPORARY HEATING EQUIPMENT**

All temporary heating equipment must be installed according to Sections 603, 1403 and 3405 of the Statewide Fire Prevention Code. Section 1403 of the International Fire Code states in part:

1403.1 Listed. Temporary heating devices shall be listed and labeled in accordance with the International Mechanical Code or the International Fuel Gas Code. Installation, maintenance and use of temporary heating devices shall be in accordance with the terms of the listing.

1403.2 Oil-fired heaters. Oil-fired heaters shall comply with Section 603.

1403.3 LP-gas heaters. Fuel supplies for liquefied- petroleum gas-fired heaters shall comply with Chapter 38 and the International Fuel Gas Code.

1403.4 Refueling. Refueling operations shall be conducted in accordance with Section 3405. The appliance shall be allowed to cool prior to refueling.

1403.5 Installation. Clearance to combustibles from temporary heating devices shall be maintained in accordance with the labeled equipment. When in operation, temporary heating devices shall be fixed in place and protected from damage, dislodgement or overturning in accordance with the manufacturer's instructions.

1403.6 Supervision. The use of temporary heating devices shall be supervised and maintained only by competent personnel.

(Note State amendments)

**SMOKING, Except in approved areas** is prohibited ACCORDING TO Section 1404.1 IFC.

**OPEN BURNING OF ANY KIND IS PROHIBITED** per Section 1404.3 IFC.

## **COMBUSTIBLE DEBRIS MUST BE KEPT FROM ACCUMULATING INSIDE BUILDINGS**

Construction debris that is combustible is the source for numerous fires at construction sites and must be removed regularly (each shift) per Section 1404.2 IFC.

**MATERIALS THAT ARE SUSCEPTIBLE TO SPONTANEOUS IGNITION (ie OILY RAGS) MUST BE STORED IN APPROVED CONTAINER** per Section 1404.4 IFC.

## **FLAMMABLE AND COMBUSTIBLE LIQUIDS**

These must be stored and used in accordance with Section 1405 of the Statewide Fire Prevention Code that states in part:

405.1 Storage of flammable and combustible liquids. Storage of flammable and combustible liquids shall be in accordance with Section 3404.

1405.2 Class I and Class II liquids. The storage, use and handling of flammable and combustible liquids at construction sites shall be in accordance with Section 3406.2. Ventilation shall be provided for operations involving the application of materials containing flammable solvents.

1405.3 Housekeeping. Flammable and combustible liquid storage areas shall be maintained clear of combustible vegetation and waste materials. Such storage areas shall not be used for the storage of combustible materials.

1405.4 Precautions against fire. Sources of ignition and smoking shall be prohibited in flammable and combustible liquid storage areas. Signs shall be posted in accordance with Section 310.

1405.5 Handling at point of final use. Class I and II liquids shall be kept in approved safety containers.

1405.6 Leakage and spills. Leaking vessels shall be immediately repaired or taken out of service and spills shall be cleaned up and disposed of properly.

## **FLAMMABLE GASSES**

Flammable gasses must be stored and used in accordance with Section 1406 of the Statewide Fire Prevention Code that states in part:

Storage and handling. The storage, use and handling of flammable gases shall comply with Chapter 35 (Special Operations).

## **EXPLOSIVE MATERIALS**

These must be stored and used in accordance with Section 1407 of the Statewide Fire Prevention Code that states in part:

407.1 Storage and handling. Explosive materials shall be stored, used and handled in accordance with Chapter 33.

1407.2 Supervision. Blasting operations shall be conducted in accordance with Chapter 33.

1407.3 Demolition using explosives. Approved fire hoses for use by demolition personnel shall be maintained at the demolition site whenever explosives are used for demolition. Such fire hoses shall be connected to an approved water supply and shall be capable of being brought to bear on post-detonation fires anywhere on the site of the demolition operation.



## **SPECIFIC FINAL INSPECTION GUIDELINES**

Building Inspection: all work complete. All other trade inspections (Plumbing, Mechanical, Electrical, Elevator) are complete and approved. Project is ready for occupancy or use, landscaping complete, sidewalks installed per Accessibility requirements, fire suppression systems operational, fire/emergency alarm operational, egress system complete to public way, stairway pressurization test complete, standpipes operational, fire hydrants operational, elevators operational,

### Plumbing Inspection:

All plumbing fixtures (this includes faucets and faucet aerators, shower heads and tub trim) must be set, connected and properly caulked. Clean outs and hose Bibb vacuum breakers must be installed. The building must have the water (hot and cold) turned on and each plumbing fixture must be tested for leakage. If the building has a testable backflow device, a completed report showing that the backflow preventer has been tested and passed the test. This report must be given to the inspector either prior to or at the time of final inspection.

Mechanical Inspection: All equipment set and operational in proper location and height, controls, diverters, switches, and valves installed and operational. All equipment has proper working clearance and access, verify all equipment, fixtures, piping or other items found during prior inspections that were not permitted <on the original permit> have been added, and verify that all violations, modifications, and associated permits have been completed (such as stand-alone gas permits).

Electrical inspection: Completion of all electrical work, all boxes finished with device or plate, switches, lights, all outlets and equipment in working order. Electrical panels complete with proper access, working clearance, and signage, overcurrent devices clearly marked with circuit designations. GFCI and AFCI devices are operational.

## **TEMPORARY CERTIFICATE OF OCCUPANCY**

The Temporary Certificate of Occupancy is permitted under the authority of the Uniform Statewide Building Code (USBC) of Virginia. Section 119.2 of that code states, in part: *Upon request of the permit holder, a temporary certificate of occupancy may be issued before the completion of the entire work covered by the permit provided that such portion or portions may be occupied safely prior to full completion of the structure without endangering life or public welfare.*

This Temporary Certificate of Occupancy applies to all occupancy classifications including single family residences, and must be requested in writing by the owner of the property through a permit application. If approved, an owner will be permitted to make use of any specific portion or all of their facility for a 30 day period while completing the remaining construction work, (if additional temporary occupancy is needed beyond the first **30 days**, an additional **\$600** will be required per 30 day period). To be considered, an applicant should contact this office at least **10 days prior to expecting a TCO**. Because of the nature of construction, and the need to begin business as early as possible, the Code Official of the City of Norfolk will continue to authorize a Temporary Certificate of Occupancy on a case-by-case basis, using the following standards:

- All construction activity will be completed in the immediate vicinity of the area proposed for occupancy including activity overhead and access to and egress from the area. All construction activity above ingress and egress must be complete.
  - All life safety aspects of construction are complete in the immediate vicinity of the area proposed for occupancy such as fire protection, fire prevention, fire alarms, means of egress, emergency lighting, emergency vehicle access and similar safety features.
  - Electrical work must be complete or at the very least, covered in the immediate vicinity of the area proposed for occupancy.
  - Sanitary facilities are complete in the immediate vicinity of the area proposed for occupancy.
  - Heating and cooling facilities are complete in the immediate vicinity of the area proposed for occupancy.
  - There is an accessible path of travel to every area proposed for occupancy.
  - A \$600 fee is submitted to the Building Construction Services Division for each request for a Temporary Certificate of Occupancy.
    - Except unusual circumstances deemed by the Code Official.
    - Multi-unit buildings such as apartments or office space with separate addresses or permit numbers will be regarded as a single project for the purposes of a Temporary Certificate of Occupancy.
- 1) *Satisfy all Zoning requirements.*
  - 2) *Satisfy all Public Works sit requirements.*
  - 3) *Elevator contractor to have elevator inspector check structural installation of elevators immediately after installation. Purpose is to check clearances, beams, shaft and to ensure elevator pit shaft and machine room are free of non-elevator materials and equipment. Building Inspector shall advise elevator inspector when shaft is completed.*
  - 4) *The general contractor is responsible to ensure all subs, i.e., electrical, mechanical, plumbing and fire are ready and have called to arrange for inspections two (2) weeks in advance for finals. All systems are to be*

- pre-tested. The assigned building inspector will coordinate with the general contractor team inspections whenever possible.*
- 5) All fire protection inspections shall be approved by Construction Services Division.
    - 1. Tests will include all hydrostatic testing of fire protection piping, standpipe flow tests and fire pump tests in accordance with NFPA 20. All devices connected to fire alarm systems, hood systems and other fire protection systems need to be pre-tested. A simulated generator load test is to be witnessed by electrical inspectors.**
  - 6) Permanent street address signs shall be displayed. All mechanical, electrical, fire control, elevator and pump rooms shall also be marked. Building signage per ADA 4.1.2(16) to be installed*
  - 7) Fire control room or exterior of building to have Knox box with keys for use by Fire Department. A complete operating manual/chart for all fire protection systems shall be in-place before occupancy. Central supervisory station to be operational where applicable.*
  - 8) Each parking space shall be marked with an above grade handicapped parking sign which includes a fine notice.*
  - 9) When the building is suppressed, sprinklers shall be installed on the floor below and above the floor to be occupied.*
  - 10) In all spaces still under construction, the construction workers and work activity shall be physically separated from the public by barriers. Required egress shall be provided with signage to be approved by the Building and Electrical Inspectors.*
  - 11) Only approved security systems for egress doors or elevators may be used and shall be approved and inspected by the Construction Services Division. Permits are necessary unless approved as part of the building permit.*
  - 12) Certificate of Occupancy shall be released only after all exterior work and site plan conditions set by approval process is completed.*
  - 13) Individual floor, tenant offices or dwelling units will be approved per each CO (Certificate of Occupancy) application after and upon approval of the CO – Core and Shell permit.*
  - 14) As-Built Drawings must be submitted to Inspector for review and approval.*

### **FINAL CERTIFICATE OF OCCUPANCY**

*In order to adequately prepare for a Final Certificate of Occupancy, please contact this office 10 days prior to expected occupancy date to discuss project status and our schedule. A 48 hour notice after Final Inspection is essential to process a request for a Final Certificate of Occupancy. All other conditions approved as well as the following reviews and inspections are complete:*

Fire Department: Complete with project and no remaining conditions.

Planning & Zoning: Complete with project and no remaining conditions.

Public Works: Complete with project and no remaining conditions.

Utilities: Complete with project and no remaining conditions.

Parks and Forestry: Complete with project and no remaining conditions.

Health Department: Complete with project and no remaining conditions.